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8th International Special Session on Current Trends in Numerical Simulation for Parallel Engineering Environments

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8^{th} International Special Session on

Current Trends in Numerical Simulation for Parallel Engineering Environments

New Directions and Work-in-Progress

ParSim 2009

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In today's world, the use of parallel programming and architectures is essential for simulating practical problems in engineering and related disciplines. Significant progress in CPU architecture (multi- and many-core CPUs, SMT, transactional memory, virtualization support, shared caches etc.) system scalability, and interconnect technology, continues to provide new opportunities, as well as new challenges for both system architects and software developers.
These trends are paralleled by progress in algorithms, simulation techniques, and software integration from multiple disciplines.

In its 8^{th} year, ParSim continues to build a bridge between application disciplines and computer science and to help fostering closer cooperations between these fields. Since its successful introduction in 2002, ParSim has established itself as an integral part of the EuroPVM/MPI conference series. In contrast to traditional conferences, emphasis is put on the presentation of up-to-date results with a short turn-around time. We believe that this offers a unique opportunity to present new aspects in this dynamic field and discuss them with a wide, interdisciplinary audience. The EuroPVM/MPI conference series, as one of the prime events in parallel computation, serves as an ideal surrounding for ParSim. This combination enables participants to present and discuss their work within the scope of both the session and the host conference.

This year, five papers from authors in five countries were submitted to ParSim, and we selected three of them. They cover a range of different application fields including mechanical engineering, material science, and structural engineering simulations. We are confident that this resulted in an attractive special session and that this will be an informal setting for lively discussions as well as for fostering new collaborations.

Several people contributed to this event. Thanks go to Jack Dongarra, the EuroPVM/MPI general chair, and to Jan Westerholm, Juha Fagerholm and Jussi Heikonen, the PC chairs, for their encouragement and support to continue the ParSim series at EuroPVM/MPI 2009. We would also like to thank the numerous reviewers, who provided us with their reviews in such a short amount of time (in most cases in just a few days) and thereby helped us to maintain the tight schedule. Last, but certainly not least, we would like to thank all those who took the time to submit papers and hence made this event possible in the first place.

We are confident that this session will fulfill its purpose to provide new insights from both the engineering and the computer science side and encourages interdisciplinary exchange of ideas and cooperations, and that this will continue ParSim's tradition at EuroPVM/MPI.

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